ECONOMICS 101A – FALL 2009
MICROECONOMIC THEORY

SYLLABUS (11/3/09)

Welcome to Economics 101A! This course is meant to introduce you to the world of formal economic modeling. Economic models are typically made of three components:

- Consumers;
- Firms;
- A market in which consumers and firms interact.

We deal with these three components sequentially. The course starts by introducing consumer preferences and utility function. We then move on to consider firms and production functions, and finally we study the market-clearing conditions.

The organizational details:

Course Time: Tuesdays and Thursdays, 9.30-11.00 in 60 Evans

Teacher: Stefano DellaVigna, 515 Evans, sdellavi@econ.berkeley.edu
OH: Th 12-2

GSIs: Mariana Carrera, OH TBA
Justin Gallagher, OH TBA

Webpage:
The link to the website will be from my webpage at http://www.econ.berkeley.edu/~sdellavi/.
You may also want to check out the 101A webpage from the Spring '09, it will give you an idea of how the class will develop:
http://emlab.berkeley.edu/users/webfac/dellavigna/e101a_s09/e101a.shtml
A link to the latter webpage is on my webpage, and a link to the former will soon to added.

Textbook:
Walter Nicholson, *Microeconomic Theory – 10th Edition*, Southwestern Editors
(If you are using the 9th or 8th Edition you'll be fine, except for the last third of the class where you will need to make some photocopies)

Course grading:
30% 6 Problem Sets
20% Midterm 1
20% Midterm 2
40% Final Exam (5/18, 8-11am)
The percentages above sum to 110%. The worst 10% of the score will not count toward your grades. For example, if the worst score is on the problem sets, the problem sets will only have 20% of weight. There is a second bonus. High-quality class participation can increase the score by at most one grade; for example, from B to B+.

Miscellaneous questions:

1. Are problem sets required?

Yes, problem sets are an integral part of the course and an important part of the grade. There will be a problem set handed out about every other week.

2. How important is attending class and reading the book?
   You will really need to do both! The book, unfortunately, is not as close to the lectures as I would like it to be, so it definitely is not a substitute for attending class, but it is still going to be helpful. Coming to the lectures is very important. I will distribute handouts of my slides during class to help you take better notes and will post them afterwards on the web with corrections in case there were some mistakes. However, the handouts are not comprehensive: they do not include graphs and go quickly over certain topics that the book covers in more detail. So, again, coming to lecture is key for this class. The book is a useful complement to the classes. Day-by-day, I will indicate which pages in the book you are responsible for. You should feel free of course to read more!

3. Is it ok if I hand in the problems sets late?
   Unfortunately, it is not ok. The GSIs will not be able to accept problem sets turned in late. With a class this size we cannot do exceptions. Sorry.

4. Can I work on the problem sets with other people?
   Yes, you can and should. I strongly recommend that you form study groups with other people. In fact, one of the strongest reasons why we require problem sets is precisely the fact that you get to work on economics problems with other people, you discuss with them, and learn from the intuition of others. Nevertheless, we expect that you will write and turn in your own solution to the problem set. After you discuss with other people, you should make sure that you can write your own solution.

5. How do I know which questions are hard in the problem set?
   We try to give you an idea of that by the points assigned to the different exercises. More means harder. In any case, expect to work hard in order to be able to solve the exercises. But do not get frustrated. It is normal if you find the exercises hard! If you can only get half of an exercise done, just write that part done. This way you can get partial credit. Afterwards, by reading the solution to the problem set, you will pick up the rest.

6. How do I choose between this class and 100A?
   The answer depends on two things: your mathematical background and your interest in economics. As for the first, this course requires a more thorough knowledge of mathematical tools than 100A does. You are supposed to be very comfortable with multivariate calculus, since we are using it throughout the course. 100A, instead, uses calculus sparingly, and is therefore more appropriate for students that are less comfortable with mathematics. In the first class, I give some examples of the level of math you will need for 101A.
   A second difference is your interest in the material. While you should expect to work hard in any class, including 100A, the workload for 101A is going to be heavier than in 100A, and is therefore justified for students that are particularly interested in economics. In addition to the basic topics (consumer and production theory), we also cover modern material, such as game theory. We are going to devote 2-3 classes to state-of-the-art findings in economics, such as the economics of self-control problems, which normally do not make it into the basic classes. The problem sets test the knowledge of these topics, and are demanding. I expect anyone who takes the class to

be seriously interested in microeconomics, in writing simple models to understand economic behavior.

For the reasons above, 101A is a better class for students considering graduate school in economics.

This being said, I should add that it is not my intention to make this course artificially hard, or require more math than is needed. This is going to be a course in economics that relies on math, not a course in math disguised as economics. Quite simply, since good economics requires some math, we are going to use math when necessary. To keep the focus on the economic content, throughout the course I will try to give intuition and to stress the economic significance to the results we cover.

7. Is it ok to use an older Edition of the Nicholson book?

   Using the older (9^{th} or 8^{th}) edition of the book is fine by me. The editors of books put out new editions more frequently than needed in order to penalize the used book market and sell more copies of the new book. (For a dissenting opinion: Chevalier and Goolsbee, 2007 argue that this is not the case). I am all for saving on the exorbitant cost of the book. The one thing you will have to be careful about is page numbers. I will try to give page numbers for both new and old edition whenever possible.

8. What if I disagree with the grading of an exam?

   If we have miscounted points on the midterms or final, tell us immediately and we will correct. If you think that we have inappropriately scored an answer, submit a complaint in writing to me. I will then re-grade your test from beginning to end. You should keep in mind that this may decrease your final grade, but still you should feel free to submit complaints.

9. Who should I talk to if I have a question?

   The GSIs should be your primary contact for questions related to the problem sets or the exams. Justin and Mariana will hold regular office hours at a time he will announce. If you would like to talk to me, I am delighted to meet during my office hours. In particular, I am happy to discuss issues of economic substance, questions inspired by the lectures, and suggestions for your future studies. So, if a class made you wonder why consumers do things that they regret ex post (such as not exercising), or why the price of airline tickets varies so widely, I am more than happy to discuss issues like these with you. In general, feel free to come see me during office hours.

10. I would like to talk to Stefano in a more informal setting. Is it possible?

    Yes, it is. After most Thursday classes, I will be heading toward Hearst Avenue to get an early lunch, a sandwich. I encourage groups of 2-4 students to join me to grab a sandwich and chat before I (we) head back to Evans. My treat! This 101A tradition has been a lot of fun for me in that has allowed me to get to know more of you. I encourage you to take advantage of it once or more during the semester.

11. I am not able to take exams in the normal time because of disability. What should I do?

    Definitely, come talk to me. You will need to provide some documentation, and we will arrange a suitable accommodation.

12. What should I expect to learn from this course?

    I would like you to be able to face a real world phenomenon/puzzle and be able to write down a sensible economic model of it. This will enable you to analyze more problems than you can imagine, ranging from economics to political science, from psychology to

sociology. Perhaps, by the end of the course you will agree with me that microeconomics provides a parsimonious and insightful way to look at the world. That's my aspiration, and I will do my best to get you to share my enthusiasm for economics!

Learning Goals. As part of Berkeley's Undergraduate Student Learning Initiative (USLI), the Economics Department has developed learning goals for the Economics major.
The specific learning goals for this course include:

- CT1. Understanding everyday economic problems
- CT2. Using economic theory to understand and evaluate policy proposals
- CT3. Comparing arguments
- CT4. Understanding the role of assumptions
- PS1. Solving problems with clear solution
- CS1. Communicate effectively about economic issues
- LL3. Understanding economic news

For more information, see http://www.econ.berkeley.edu/econ/ugrad/ugrad_goals.shtml.

Here is a preliminary schedule of topics to be covered in class. I anticipate that there will be some changes to this schedule over time. I will distribute updated lists of topics covered as time goes on.

Mathematical Background

Lecture 1 (August 27).
Introduction
Motivation
Maximization in One Variable (Ch. 2)

Lecture 2 (September 1).
Maximization in Several Variables (Ch. 2)
Comparative Statics
Implicit Function Theorem
Problem Set 1 posted on web

Lecture 3 (September 3).
Concavity and convexity
Constrained Maximization (Ch.2)

Consumers

Lecture 4 (September 8).
Constrained Maximization II (Ch.2)
Preferences and Utility (Ch. 3)

Lecture 5 (September 10).
Preferences and Utility II (Ch. 3)
Common Utility Functions

Lecture 6 (September 15).
Utility Maximization and Choice I (Ch. 4)
Problem Set 1 due in class

Lecture 7 (September 17).
Utility Maximization and Choice II (Ch. 4)
Indirect Utility Function
Problem Set 2 posted on web

Lecture 8 (September 22).
Comparative statics
Expenditure Minimization

Lecture 9 (September 24).
Slutzky Equation
Income and Substitution Effects (Ch. 5)
Labor Supply

Lecture 10 (September 29).
Intertemporal Choice
Problem Set 2 due in class

No Lecture (October 1).
1st Midterm

Lecture 11 (October 6).
Economics of Altruism
Choice under uncertainty (Ch. 8)
Introduction to Probability
Expected Utility
Risk Aversion

Lecture 12 (October 8).
Insurance
Investment in Risky Asset
Measures of Risk Aversion
Problem Set 3 posted on web

Lecture 13 (October 13).
Time Inconsistency
Application to health clubs

Producers
Lecture 14 (October 15). *(Justin and Mariana)*
Production Functions (Ch. 11)
Isoquants
Returns to Scale

Lecture 15 (October 20).
2-Step Cost Minimization (Ch. 12)
Total, Average, Marginal Costs
Supply Function
Problem Set 3 due in class

Lecture 16 (October 22).
Geometry of Cost Curves
One-Step Profit Maximization (Ch. 13)
Aggregation
Short-run Market Equilibrium (Ch. 14)
Problem Set 4 posted on web

Lecture 17 (October 27).
Comparative Statics of Equilibrium
Taxes

Lecture 18 (October 29).
Consumer and Producer Surplus
Long-run Market Equilibrium

Lecture 19 (November 3).
Monopoly (Ch. 18)
Price Discrimination
Problem Set 4 due in class

Lecture 20 (November 5).
Game Theory
Mixed Strategy Equilibria

No Lecture (November 10).
2nd Midterm

Market Interaction

Lecture 21 (November 12).
Oligopoly: Cournot
Oligopoly: Bertrand
Auctions
Problem Set 5 posted on web

Lecture 22 (November 17).
Dynamic Games
Oligopoly: Stackelberg

Lecture 23 (November 19).
Economics of the Media. (*Guest lecture with Nancy Tellem, CBS*)

Lecture 24 (November 24).
General Equilibrium
Edgeworth Box
Problem Set 5 due in class

Thanksgiving Holiday

Lecture 25 (December 1).
General Equilibrium II

Moral Hazard/Adverse Selection Issues I
Problem Set 6 posted on web

Lecture 26 (December 3) – Last lecture!
Moral Hazard/Adverse Selection Issues II
Conclusion

Problem Set 6 due on December 8

Final exam (12/15/09 8-11am)